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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/947,221	10/08/97	CHAKRABARTI	AM9-97-120

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LM71/0930

EXAMINER

LE, U

ART UNIT	PAPER NUMBER
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2771

DATE MAILED: 09/30/99

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
08/947,221

Applicant(s)  
Chakrabarti et al

Examiner  
Uyen Le

Group Art Unit  
2771



☒ Responsive to communication(s) filed on Jul 6, 1999

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-13 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-13 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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## **DETAILED ACTION**

### ***Answers to Remarks***

1. Applicant's argument of "by accounting for hyperlinks, the present invention would return affinities between closely related Web documents even if the documents contained no common terms" is noted. However, at page 6, line 5, applicant only specifies that "a possible affinity would be the numerical count of occurrences of a word entity in a document entity". At lines 13-15, applicant only states that the affinity of document A to document B may be defined as 1 if there is a hyperlink from A to B, and as zero otherwise. There is no support for how applicant establishes hyperlinks between entities. Therefore, "hyperlink" is examined in the general well known sense of a highlighted item in a user graphical interface allowing access to a related URL.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 12, 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Deerwester (US Patent 5,778,362).

Regarding claims 12, 13, Deerwester discloses a method for eliciting useful information from first and second collections of entities including the steps of obtaining the entities (see the abstract and

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column 1), obtaining affinity values (see column 2, lines 1-32). Deerwester also discloses that iteration is used for relevance feedback until the results stabilize within a predetermined threshold or are deemed to satisfy users' criteria (see column 7, line 50-column 8, line 11). Significance values read on relevance values of Deerwester. Besides, it is clear that iteration necessitates initialization of the significance values as claimed. Also, note there is no explicit limitation in Deerwester to constrain the affinity values to be symmetric, nor to obtain affinities based on content alone.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deerwester (US Patent 5,778,362), in view of Barrett et al (US Patent 5,727,129).

Regarding claim 1, Deerwester discloses a method for eliciting useful information from first and second collections of entities including the steps of obtaining the entities (see the abstract and column 1), obtaining affinity values (see column 2, lines 1-32). Deerwester also discloses that iteration is used for relevance feedback until the results stabilize within a predetermined threshold

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or are deemed to satisfy users' criteria (see column 7, line 50-column 8, line 11). Significance values read on relevance values of Deerwester. Besides, it is clear that iteration necessitates initialization of the significance values as claimed. Although Deerwester does not specifically show that hyperlinks are established between at least some of the entities, it is well known in the art as shown by Barrett that related entities are linked by hyperlinks (see column 2, lines 40-47). Clearly, at least one affinity value depends on at least in part on at least one hyperlink since hyperlinks are linking related entities retrieved by a search engine. Therefore, it would have been obvious to one of ordinary skill in the art to implement hyperlinks and dependent affinity values as claimed in order to elicit information from closely related entities in the method of Deerwester.

Regarding claim 2, the step of obtaining affinity values read on the values of the discrimination vector  $d$  where a large positive value indicates that the correspondent term occurred much more frequently than expected and a  $-1$  indicates that the term did not occur at all (see column 5, lines 30-50).

Regarding claims 3-4, Deerwester discloses the concept of a single set of entities, wherein affinity values are obtained for respective entities in the single set (see column 2, lines 1-7, 11-12, 16-32).

Regarding claim 5, the raw affinity values read on the scalar values disclosed by Deerwester in the

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calculation of derived affinity values for similarity measures (see column 1, line 60-column 2, line 50).

Regarding claim 6, Deerwester discloses the use of MIN and SUM operations in the step of deriving affinity values (see column 6, lines 46-50).

Regarding claim 7, the step of computing similarity values read on the calculation of similarity measures of Deerwester (see column 6, lines 35-62). Furthermore, calculating updated significance values clearly involves previous significance values and affinities as claimed.

Regarding claims 8-9, the iterated principal affinity component values read on the non-principal eigen vectors of the similarity matrix in the method of Deerwester (see column 6, line 60).

Regarding claim 10, Deerwester discloses updating the similarity matrix to obtain the useful information (see column 6, lines 46-60). Clearly the similarity matrix includes updated non-principal eigen vectors of the similarity matrix.

Regarding claim 11, Deerwester discloses the step of obtaining a cluster (see column 6, line 63-column 7, line 9).

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*Conclusions*

4. THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uyen Le whose telephone number is (703) 305-4134. The examiner can be reached on Monday through Thursday from 7:00am to 4:30pm. The examiner can also be reached on alternate Fridays from 7:00am to 3:30pm.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (703)305-9707.

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**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington D.C. 20231

**or faxed to:** (703)308-9051, (for formal communications intended for entry)

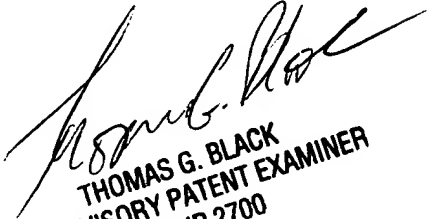
**or:** (703)308-5399 (for informal or draft communications, please label "PROPOSED" or DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone is (703)305-3900.

UL

September 26, 1999

  
THOMAS G. BLACK  
SUPERVISORY PATENT EXAMINER  
GROUP 2700